

Intermetallic Reinforced Cr Alloys

Project Lead




Oak Ridge National
Laboratory (ORNL)
Oak Ridge, TN

Description

The objective of this task is to develop high-strength, oxidation- and corrosion-resistant Cr alloys for use as hot components in advanced fossil energy conversion and combustion systems to help meet the 65% efficiency goal of the Vision 21 Concept. The successful development of these alloys is expected to improve thermal efficiency through increased operating temperatures and decreased cooling requirements. These alloys are also potentially enabling in aggressive, high-temperature molten salt and slag environments, such as those encountered in gasification systems, for use in process monitoring (e.g. thermowells) and as structural components or protective coatings. The development effort will initially be devoted to in-situ composite alloys based on a Cr solid solution matrix reinforced with the Cr₂X (X = Nb, Ta, ...) Laves phase.

Duration: 10/1/00 - 9/30/01

Product Support Areas

Gasification Technologies	Combustion Technologies	Sequestration	Environmental & Water Resources	Advanced Turbine & Engines	Fuel Cells
					



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